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Spring 1-1-2020

## MNET 414-002: Industrial Cost Analysis

Ahit Chaudhuri

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**New Jersey Institute of Technology**  
**Department of Engineering Technology**  
**MNET 414 Industrial Cost Analysis**

<b>COURSE NUMBER</b>	MNET 414
<b>COURSE DESCRIPTION</b>	Industrial Cost Analysis
<b>COURSE STRUCTURE</b>	3-0-3 (lecture hr/wk - lab hr/wk – course credits)
<b>COURSE COORDINATOR/ INSTRUCTOR</b>	Dr. S. Lieber/ A. Chaudhuri
<b>COURSE DESCRIPTION</b>	An introduction to general costing techniques. Time value of money concepts are introduced to decision-making matters such as equipment justification, design selection and fabrication costs.
<b>PREREQUISITE(S)</b>	None
<b>COREQUISITE(S)</b>	None
<b>REQUIRED MATERIALS</b>	Engineering Economic Analysis, <u>Fouteenth Edition</u> , by Donald G. Newnan et al, Oxford Press, ISBN: 9780190931919and Study Guide
<b>COMPUTER USAGE</b>	Spreadsheets
<b>COURSE LEARNING OUTCOMES</b>	<p>By the end of the course students should be able to:</p> <ol style="list-style-type: none"> <li>1. Calculate industrial costs and benefits using a variety of techniques</li> <li>2. Understand the importance of time-value of money in economic analyses and calculate its effects on investments and loans</li> <li>3. Analyze realistic cost:benefit scenarios in typical industry problems</li> <li>4. Evaluate economic alternatives considering the effects of depreciation and taxes</li> <li>5. Parse complex real-world technical cost issues, identify and analyze cost reduction alternatives, and make an oral and written presentation to “management”</li> <li>6. Demonstrated ability to read-ahead course materials in advance of class lecture, and report both key learnings and issues to instructor before class</li> <li>7. Understand and practice how to recognize and analyze ethical issues</li> </ol>
<b>CLASS TOPICS</b>	Making Economic Decisions, Engineering Costs and Cost Estimating, Interest & Equivalence, Interest Formulae, Present Worth Analysis, Annual Cash Flow Analysis, Rate of Return Analysis, Incremental Analysis, Other Analysis Techniques, Depreciation, Income Taxes, Ethics
<b>STUDENT OUTCOMES</b>	<p>The Course Learning Outcomes support the achievement of the following MET Student Outcomes and TAC of ABET Criterion 9 requirements:</p> <p><b>Student Outcome a</b> - an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;</p> <p><b>Related CLO – 1-4</b></p>

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**Student Outcome f** - an ability to identify, analyze, and solve broadly-defined engineering technology problems;

**Related CLO – 5**

**Student Outcome h** - an understanding of the need for and an ability to engage in self-directed continuing professional development.

**Related CLO – 6**

**Student Outcome i** –an understanding of and commitment to address professional and ethical responsibilities including a respect for diversity.

**Related CLO – 7**

**GRADING POLICY**

3-Exams “drop the lowest” - 40%; Final Exam - 30%;  
HW-10%; 3-Quizzes “drop the lowest” - 10%; Special Project - 10%

**ACADEMIC INTEGRITY**

NJIT has a zero-tolerance policy regarding cheating of any kind. Student behavior that is disruptive to the learning environment will not be tolerated. Incidents will be reported to the Dean of Students. Honor Code violations may result in failure in the course, disciplinary probation, and/or expulsion from NJIT. Refer to <http://www.njit.edu/academics/honorcode.php>.

**STUDENT BEHAVIOR  
MODIFICATION TO  
COURSE**

Will be discussed in class  
The Course Outline may be modified at the discretion of the instructor or in the event of extenuating circumstances. Students will be consulted if any changes occur. .

**PREPARED BY  
COURSE COORDINATED  
BY**

Ajit Chaudhuri  
Dr. S. Lieber

**CLASS HOURS**

Monday        10:00 AM to 12:50 PM    CKB 303

**OFFICE HOURS**

Before Class After Class or By Appointment:  
Email [chaudhur@njit.edu](mailto:chaudhur@njit.edu)

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MNET 414 Industrial Cost Analysis**

**GRADING LEGEND**

<b>GRADE</b>	<b>NUMERIC RANGE</b>
A	90 to 100
B+	85 to 89
B	80 to 84
C+	75 to 79
C	70 to 74
D	60 to 69
F	0 to 59

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**COURSE OUTLINE**

<b>Week</b>	<b>Date</b>	<b>Topics</b>	<b>Reading-Assignment</b>	<b>Homework\Classwork Assignment</b>
<b>1</b>	<b>1/27</b>	Making Economic Decisions Engineering Costs and Cost Estimating	<b>Ch 1 Ch 1-2</b>	<b>Will be in the moodle/Canvas</b>
<b>2</b>	<b>2/3</b>	Engineering Costs and Cost Estimating	<b>Ch 2 Cont.</b>	<b>Will be in the moodle/Canvas</b>
<b>3</b>	<b>2/10</b>	Interest and Equivalence (omit selected section)	<b>Ch 3</b>	<b>Will be in the moodle/Canvas</b>
<b>4</b>	<b>2/17</b>	Equivalence for Repeated Cash Flows (omit selected section) <b>Quiz # 1</b>	<b>Ch 4</b>	<b>Will be in the moodle/Canvas</b>
<b>5</b>	<b>2/24</b>	<b>Review Test 1 (Ch 1,2,3,4)</b>	<b>---</b>	<b>Will be in the moodle/Canvas</b>
<b>6</b>	<b>3/2</b>	Present Worth Analysis	<b>Ch 5</b>	<b>Will be in the moodle/Canvas</b>
<b>7</b>	<b>3/9</b>	Annual Cash Flow Analysis	<b>Ch 6</b>	<b>Will be in the moodle/Canvas</b>
<b>SPRING BREAK 3/15-3/22</b>				
<b>8</b>	<b>3/23</b>	Rate of Return Analysis	<b>Ch 7</b>	<b>Will be in the moodle/Canvas</b>
<b>9</b>	<b>3/30</b>	Other Analysis Techniques <b>Quiz # 2</b>	<b>Ch 9</b>	<b>Will be in the moodle/Canvas</b>
<b>10</b>	<b>4/6</b>	<b>Review Test 2 (Ch 5,6,7,9)</b>	<b>---</b>	<b>Will be in the moodle/Canvas</b>
<b>11</b>	<b>4/13</b>	Depreciation (omit selective section )	<b>Ch 11</b>	<b>Will be in the moodle/Canvas</b>
<b>12</b>	<b>4/20</b>	Income Taxes <b>Review and</b> <b>Quiz # 3</b>	<b>Ch 12</b>	<b>Will be in the moodle/Canvas</b>
<b>13</b>	<b>4/27</b>	<b>Test 3 (Ch 11,12) R Nov 28 Thanksgiving holiday)</b>	<b>---</b>	<b>Special Project (Selected problems or Case studies)</b>
<b>14</b>	<b>5/4</b>	Replacement analysis, Inflation and price change, Selection of attractive return, (Selected sections from chapters)	<b>Ch 13,14,15</b>	
	<b>TBD</b>	<b>Final Exam</b>	<b>All Chapters</b>	

**Note:**

<b>01/31/2020</b>	<b>Friday</b>	<b>Last day to add/drop and 100% refund</b>
<b>02/03/2020</b>	<b>Monday</b>	<b>Last day for 90% refund; full or partial withdrawal</b>
<b>02/17/2020</b>	<b>Monday</b>	<b>Last day for 50% refund, Full withdrawal</b>
<b>03/09/2020</b>	<b>Monday</b>	<b>Last day for 25% refund, Full withdrawal</b>
<b>03/15-22/2020</b>	<b>Sunday-Sunday</b>	<b>Spring recess</b>
<b>04/06/2020</b>	<b>Monday</b>	<b>Last day to withdraw</b>